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The impact of rule modifications on player behaviour in a talent identification and development environment: A case study of the Rugby Football Union's Wellington Academy Rugby Festival

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Abstract

Research has suggested that competition within talent identification and development systems should be modified from the adult format of the sport to meet the developmental needs of those participating. Yet limited research has evaluated the success of game changes, particularly the effectiveness of modifying the rules of a game to purposefully engineer changes in player behaviour. The purpose of this study was to monitor the impact of rule modifications on player behaviour within a talent identification and development system in rugby union. Performance indicators (ball in play, pass, offload, kick) were collected during full length (70 minutes) and shortened durations (30-42 minutes) of competitive matches played during a weeklong under sixteen rugby union festival in 2016 and after rule modifications were introduced in 2017-2019. The findings indicate that rule modifications had the prescribed impact on player actions, particularly in the shortened duration formats of the game. Therefore, rule modifications provide talent developers a tool to manipulate player behaviour, in this case skill attempts, within full-sided competitive matches.

Keywords: Rule modifications, Rugby Union, Decision-making, Match-duration, Talent identification & development

Introduction

It is universally accepted that talent identification and development (TID) is a nonlinear process (Hill, MacNarmara & Collins, 2015; McCarthy & Collins, 2014). Early success, which tends to be identified within competition, is a poor indicator of future elite status (Collins, MacNamara & McCarthy, 2016; Abbott & Collins, 2004; Taylor & Collins, 2019; Vaeyens et al., 2009). Despite this, competition remains a significant part of TID environments (Burgess & Naughton, 2010; Elferink-Gemser & Visscher, 2012) with the purpose, frequency and format of competition open to debate (Cote et al., 2007; Cote, Lidor & Hackfort, 2009; Rongen et al., 2018). One guiding principle is that the performance of youth athletes should not necessarily be determined by adult regulations. Instead, performance environments should reflect and suit the age and/or developmental stage and TID goals of those participating (Burgess & Naughton, 2010; Cote et al, 2007; Thomas & Wilson, 2014). This often means modifications from adult performance rules.

Small-sided formats of team sports have been considered as appropriate adaptions to competition within TID contexts (e.g., Fenner, Iga & Unnithan, 2016; Bennett et al., 2017). Numerous studies have explored the impact of constrained field size, reduced players and shortened durations during general match play in youth soccer (Unnithan et al., 2012; Fenner, Iga & Unnithan, 2016; Bennett et al., 2018; Burgess & Naughton, 2010; Silva et al., 2016; Ortega-Toro et al., 2018; Abrantes et al., 2012; Davids et al., 2013). Consistently, the modification of pitch parameters, goal size or the number of players on each team has been shown to positively influence the behaviour of the player in possession of the ball e.g. increased touches on the ball (Phillips et al., 2010; Travassos et al, 2014; Silva et al., 2016; Ortega-Toro et al., 2018). While desirable changes have been a result of changing team and pitch size, this approach to rule adaptation may not always be useful. For example, as young talented participants progress through ‘the specialising years’ (age 13-15) of a TID process, the

positional demands of the sport become more prevalent (Cote et al., 2007; Cote et al., 2009). In rugby union specifically, the technical and physical demands differ significantly from position to position within age group TID settings (Darrall-Jones, Jones & Till, 2015; Darrall-Jones, Jones & Till, 2016). Furthermore, rugby union separates positions into 'units' named forwards and backs, which require different technical and physical solutions (Darrall-Jones, Jones & Till, 2015; Darrall-Jones, Jones & Till, 2016). Small sided games run the risk of removing too much of this important contextual demand thus reducing the reality of the environment. Consequently, the adoption of small sided games or the modification of pitch size potentially steers player development too far away from the adult format of rugby union, instead resembling popular derivatives of the game (e.g., Sevens, Tag Rugby or Rugby X).

Alternatively, Burton, Gillham and Hammermeister (2011) proposed the use of *competitive engineering* for youth competitive sport. Competitive engineering was shaped by the work of Coakley (1980) who interviewed youth athletes to understand their wants and needs when taking part in competition. His findings implied that youth athletes prefer environments that create increased action and scoring, increased opportunities for personal involvement, close scores and positive social relationships. Given that rules shape what is legally accepted on the field of play (Suits, 1978) and, therefore, constrain how players act, competitive engineering modifies rules to bring about competitive experiences that better align to the wants and needs of youth players (Burton, Gillham & Hammermeister, 2011; Burton et al., 2011). For example, more opportunities to act than would be offered to players competing in the adult format of the game (Burton, Gillham & Hammermeister, 2011; Vaeyens et al., 2009; Unnithan et al, 2012). A natural by-product of increased action is the rise in the number of occasions player's will be asked to make decisions on how to act (Phillips et al., 2010), a key developmental objective of competitive TID environments (Unnithan et al., 2012). Therefore,

a competitive engineering approach to game design can utilise carefully crafted rule modifications to promote players experience of certain types of decision-making scenarios.

Several studies have explored the impact of rule modifications within adult formats of team sports (e.g. Van den Berg & Malan, 2012; Williams, Hughes & O'Donoghue, 2005). Williams et al., (2005) monitored experimental law variations introduced by World Rugby (Union) in 1999 that were designed to increase the safety, competition and continuity in the game. Specific variations included "Defending players will only be allowed to challenge for possession by joining the contest behind the player nearest to their own goal line who is involved in the tackle"; and the introduction of the 'sin bin', where players are given a ten-minute expulsion from the game following repetitive infringements. Performance analysis showed that increased competition and continuity was reflected by an increase in passes, carries, phases of play and ball in play time, indicating that the rules had the desired effect (Williams et al., 2005). Likewise, law variations introduced into professional rugby union in the Southern Hemisphere (Super 14 Rugby) designed to increase player actions (i.e. tackles, carries, passes, offloads) and decrease the number of set pieces (i.e. lineout and scrums), had a positive effect on how the game was played (Van den Berg & Malan, 2012). Performance analysis of match play across two seasons found large significant effects for increases in tackles made and meters gained and medium effects for the frequency of rucks, defenders beaten and passes made, whilst set pieces were found to significantly decrease (Van den Berg & Malan, 2012). Such findings corroborate the theoretical concept of competitive engineering in adult competition.

The Wellington Academy Rugby Festival

While competitive engineering has been used to formally create experiments by researchers, it has also been used deliberately within an element of the talent pathway employed

within the English Rugby Football Union (RFU). The RFU oversees a TID pathway made up of fourteen Regional Academies. Since 2016 the RFU has invited all fourteen Regional Academies to attend the Wellington College Rugby Festival for which each club must select thirty players from the under sixteen age group. The festival was conceptualised as a vehicle for the learning and development of talented under sixteen rugby players and follows a set format: Day 1 - Welcome and familiarisation; Day 2 - Matchday 1; Day 3 - Recovery and academy development [coaches and players are invited to attend workshops i.e. on nutrition or lifestyle]; Day 4 - National Coaches day; Day 5 - Academy development; and Day 6 - Matchday 2. Over the course of the 2016 and 2017 festivals, players were faced with the prospect of being selected to play for the England under 16 programme following the festival (which was ran by volunteers external to the RFU). Furthermore, the conclusion of the festival coincided with being selected/deselected to their Regional Academies under 18 squad.

Following the 2016 festival, figureheads within the RFU made observations that players were not getting enough opportunities to make decisions on both Matchdays, and data collected during the festival supported this observation. For instance, research has suggested that increased BIP time affords increased ball movement; decision-making opportunities and indicates quality when keeping possession of the ball for prolonged periods of time (Jones et al., 2004; Eaves et al, 2003; Van den Berg & Malan, 2012; Williams, Hughes & O'Donoghue, 2005; Gabbett, 2015). Across the 2013, 2014 and 2015 men's international Six Nations tournaments, the average BIP time was 46% (World Rugby, 2015) whilst analysis of the 2016 Wellington festival found the average BIP was at 48%. As research has frequently suggested that competition within TID should provide higher amounts of opportunities to act than would be offered to players competing in the adult format (Burton, Gillham & Hammermeister, 2011; Vaeyens et al., 2009; Unnithan et al, 2012), alternative rules were required to increase the

volume of learning opportunities during the festival (Capranica & Millard-Stafford; Unnithan et al., 2012).

Consequently, the RFU designed the *Wellington Rules* (see Table 1). The aims of the rules were threefold: 1) increase ball in play time; 2) increased ball-movement (number of actions); and, consequently, 3) increase the opportunities for all players to make more decisions. The aim of this study was to analyse the impact of these engineered rule modifications on competitive match play and player behaviour.

Table 1: Modifications to standard under 16 rules used in the Wellington Academy Rugby Festival since 2017.

*******Insert Table 1 here*******

Materials and Methods

Data collection

All fourteen Regional Academies consented to take part in the study. Every game from the 2016, 2017, 2018 and 2019 festivals were recorded by a video camera placed on the halfway line (n = 105 games). A total of twenty-eight games were played at the 2016, 2016 and 2018 festivals; where Regional Academies played three games of thirty minutes on Matchday 1 (n = 21 games) and one game of seventy minutes on Matchday 2 (n = 7 games). Whilst in 2019, a total of twenty-one games were played; as Regional Academies played two games of forty-five minutes on Matchday 1 (n = 14 games) and one game of seventy minutes on Matchday 2 (n = 7 games). The second author conducted post event analysis using SportCode Elite software (SportsCode Elite, V11, Hudl, Lincoln, Nebraska, United States of America) for all 105 games played at the Wellington Festival between 2016 and 2019. Performance indicators were carefully selected to analyse game footage in reference to the aims of the study. These included

the duration of *ball in play* (BIP), and the frequency of *kicks*, *offloads* and *passes* to denote ball-movement/decision-making opportunities.

Performance indicators were analysed in reference to the following operational definitions. Firstly, BIP was calculated as the total duration of time where possession of the ball was legally contested in the field of play. Whilst the ball was considered out of play when the referee blew their whistle to stop the game or when the ball went out of the field of play (Williams, Hughes & O'Donoghue, 2005). Secondly, Kicks were defined by a player's deliberate attempt to release the ball from their hands and make contact with their foot before the ball hit the ground (James, Mellalieu & Jones, 2004). Thirdly, offloads were defined as an attempt to distribute the ball to a supporting attacking player whilst *in contact* with a defending player (Wheeler, Wiseman & Lyons, 2017; Pulling & Stenning, 2017). Finally, passes were defined as an attempt to distribute the ball whilst *not in contact* with a defending player (Correia et al., 2011). Inter-rater reliability analysis was conducted by the first author on a sample of sixteen games equally distributed by Year and Matchday (Chronbach's Alpha; BIP = 1.00; Kicks = 1.00; Offloads = .99; Passes = .99).

Data Analysis

To allow for comparisons between both Year and Matchday the data was pre-processed in the following way. First the data were normalised. Then, due to changes in game duration across both Year and Matchday, BIP time was calculated as a percentage of game duration, and kick, offload and pass data were standardised to actions per minute by each Regional Academy. Due to differences in the number of games played on Matchday 1 in 2019 (two 42-minute games) and in 2016-2018 (three 30-minute games), a median score was calculated for each variable in order to best represent performance on Matchday 1 in the comparison to scores taken from the 70-minute game on Matchday 2.

The pre-processed data met assumptions for parametric tests and were entered into a 4 (Years 2016-2019) x 2 (Matchdays) multivariate analysis of variance (MANOVA) with repeated measures that including all four performance indicators. To explain main and interaction effects, a separate 4 (Years, 2016-2019) x 2 (Matchdays) analysis of variance (ANOVA) with repeated measures was computed for each dependent variable. Greenhouse-Geiser epsilon adjustments were reported as appropriate. Bonferonni adjustments were made to t-tests computed to further explore the main and interaction effects that emerged.

Results

MANOVA found main effects of Year, $F(12, 129.93) = 6.05$, $p < .001$, $\eta^2 = .32$, and Matchday, $F(4, 49) = 136.31$, $p < .001$, $\eta^2 = .92$, and a significant interaction effect between Year and Matchday, $F(12, 129.93) = 3.31$, $p < .001$, $\eta^2 = .21$, for the composite of the four dependent variables, indicating general differences for further exploration.

Ball in Play (BIP%)

The Year x Matchday ANOVA with repeated measures found main effects of Year, $F(1, 52) = 5.06$, $p < .001$, $\eta^2 = .50$, and Matchday, $F(1, 52) = 471.45$, $p < .001$, $\eta^2 = .90$, and a significant interaction, $F(3, 52) = 5.05$, $p < .04$, $\eta^2 = .23$. Follow-up comparisons to explain the main effect of Year found the mean BIP% in the 2018 festival (M =50.72, SD =7.96) to be significantly higher than all other years (all $ps < .001$), which did not significantly differ from each other (2016: M =45.64, SD =6.82; 2017: M =46.64, SD = 9.12; 2019: M =44.58, SD =8.30). Observation of the means to explain the main effect of Matchday shows that BIP% was higher in Matchday 1 (M =54.01, SD =4.60) than Matchday 2 (M =39.78, SD =3.93).

In order to explore the interaction, differences in BIP% across the four years on Matchday 1 and on Matchday 2 were examined by separate one-way ANOVA's. Significant

effects of Year were found for both Matchday 1, $F(3, 52) = 12.973$, $p < .002$ and Matchday 2, $F(3, 52) = 9.030$, $p < .002$.

Post hoc t-tests found that the Matchday 1 increase in BIP% between 2016 and both 2017 ($d = 1.06$) and 2018 ($d = 1.91$) (see Figure 1) were significant (both ps $< .009$). There was a decrease in BIP% between 2018 and 2019 ($p < .001$, $d = 2.36$).

On Matchday 2, there was a significant increase in BIP% between 2017 and 2018 ($p < .001$, $d = 2.90$). There was a significant decrease in BIP% between 2018 and 2019 ($p < .001$, $d = 1.64$). That is, the observable increase in BIP% in 2018 from the 2016 baseline was not significant ($p > .24$; $d = .87$).

*******Insert Figure 1*******

Figure 1: Ball in play (%) for Matchday 1 and Matchday 2 for each year of the Wellington Academy Rugby Festival.

Ball Movement

Passes per minute (PPM): The Year x Matchday ANOVA with repeated measures found main effects of Year, $F(3, 52) = 3.34$, $p < .02$, $\eta^2 = .16$, Matchday, $F(1, 52) = 69.03$, $p < .002$, $\eta^2 = .57$, and a significant interaction $F(3, 52) = 2.94$, $p < .04$, $\eta^2 = .15$. Follow-up comparisons to explain the main effect of Year found a significant difference in the mean PPM between the 2016 ($M = 1.59$, $SD = .31$) and 2018 festivals ($M = 1.88$, $SD = .36$, $p < .02$), with PPM higher in 2018. Observation of the means to explain the main effect of Matchday shows that PPM was higher on Matchday 1 ($M = 1.98$, $SD = .36$) than on Matchday 2 ($M = 1.54$, $SD = .32$, $p < .002$).

Interaction differences in PPM across the four years on Matchday 1 and on Matchday 2 (see Figure 2: Panel A) were examined by separate one-way ANOVA's. A significant effect was found for Matchday 1, $F(3, 52) = 5.561$, $p < .002$, but not Matchday 2, $F(3, 52) = .81$, $p >$

.49. Follow-up t-tests confirmed that on Matchday 1 PPM were significantly higher in 2017, 2018 and 2019 than the 2016 baseline (all $p < 0.05$; 2017: $d = 1.19$; 2018: $d = 1.41$: 2019: $d = 1.19$).

Offloads per minute (OPM): The Year x Matchday ANOVA with repeated measures found a main effect of Matchday, $F(1, 52) = 10.51$, $p < .02$, $\eta^2 = .17$, but not of Year, $F(3, 52) = 1.28$, $p > .29$, $\eta^2 = .07$, and no interaction was evident, $F(3, 52) = 2.037$, $p > .12$, $\eta^2 = .11$ (see Figure 2; Panel B). Observation of the means shows that OPM were greater on Matchday 1 ($M = .30$, $SD = .09$) than Matchday 2 ($M = .25$, $SD = .11$).

Kicks per minute (KPM): The Year x Matchday ANOVA with repeated measures found main effects of Year, $F(1, 3) = 6.56$, $p < .002$, $\eta^2 = .27$, and Matchday, $F(1, 52) = 4.97$, $p < .05$, $\eta^2 = .09$, and a significant interaction $F(3, 52) = 2.78$, $p < .05$, $\eta^2 = .14$. Follow-up comparisons to explain the main effect of Year found a significant difference in the mean KPM between the 2016 ($M = .17$, $SD = .07$) and 2019 festivals ($M = .10$, $SD = .04$; $p < .05$), with KPM lower in 2019. The main effect of Matchday was explained by more KPM in Matchday 1 ($M = .14$, $SD = .07$) than Matchday 2 ($M = .12$, $SD = .05$; $p < .03$).

Separate one-way ANOVA's of KPM on Matchday 1 and on Matchday 2 both found significant differences, $F(3, 52) = 4.78$, $p < .005$ and $F(3, 52) = 5.18$, $p < .003$, respectively. Post hoc t-tests revealed Matchday 1 significant decreases in KPM between 2016 and both 2018 and 2019 (both ps $< .05$; 2018: $d = .91$; 2019: $d = 1.29$). Similarly, on Matchday 2 the decrease in KPM between 2016 and 2019 was significant ($p < .03$, $d = 1.00$). Further, KPM in 2019 were significantly lower than in 2018 ($p < .005$, $d = 1.59$; see Figure 2; Panel C).

*******Insert Figure 2(a, b & c)*******

Figure 2: Passes per Minute (a), Offloads per Minute (b) and Kicks per Minute (c) for Matchday 1 and Matchday 2 for each year of the Wellington Academy Rugby Festival.

Discussion

Rule modifications to competitive talent identification and development (TID) games can have positive cognitive, affective and behavioural outcomes for players (Burton, Gillham & Hammermeister, 2011; Vaeyens et al., 2009). The primary aim of this research was to evaluate the impact of rule modifications that were deliberately designed by a sport's national governing body (i.e., Rugby Football Union) to engineer an increase in players' opportunities to make decisions and to act, as measured by ball in play, passes per minute, offloads per minute and kicks per minute. A case study of the *Wellington Academy Rugby Festival* tracked the impact on key performance indicators of the *Wellington Rules* across three years following their inception in 2017 using data from 2016 as a baseline.

Performance analysis indicated that the Wellington Rules led to a general above baseline increase in ball in play (BIP) time only in 2018. This coincided with an overall above baseline increase in the average number of passes made per minute. However, closer inspection of the data found that the Wellington Rules had an immediate positive effect on the percentage of time the ball was in play and the passes made per minute in the shortened format of the game (Matchday 1). In full length games of 70 minutes the rules did not increase ball in play time above the 2016 baseline (although the ball was in play longer in 2018 than 2017) and had no effect on the number of passes per minute.

Williams et al (2005) demonstrated that law variations engineer increased BIP time in rugby union (see also Van den Berg & Malan, 2012), and, in turn, a raised frequency of key actions (Williams et al., 2005; Van den Berg & Malan, 2012; Spencer & Brady, 2015 Gabbett, 2015), if the rules target specific moments of the game. Two of the *Wellington Rules*

(modification number 2 and 6, see Table 1) were designed to encourage faster transitions when the ball is out of play, whilst another rule modification (number 7) denied the players the opportunity to kick the ball out of play without it bouncing first. The results suggest that the combination of these modifications had a desirable impact on player behaviour, particularly on Matchday 1, which manifested in increased ball in play time and passes made. A potential desirable by-product of these findings is that the *Wellington Rules* afforded players a greater number of decision-making opportunities (Burton, Gillham & Hammermeister, 2011; Vaeyens et al., 2009; Unnithan et al, 2012). Interestingly, the percentage of time the ball was in play during the shortened game format returned to the 2016 baseline in 2019, although passes per minute were still significantly above baseline. This was despite the ball being kicked less in 2019 than it had been in 2016.

Research has suggested that when rules are modified, the landscape of relevant information changes and influences how a player acts (Ashford, Abraham & Poolton, 2020; Fajen, Riley & Turvey, 2008; Passos et al, 2008; Correia at al., 2012; Arias, Argudo & Alonso, 2011). For example, one of the Wellington Rules prevents players from kicking the ball out of touch on the full. Therefore, a player who has had this possibility taken away, must interact with information associated with other actions (i.e. pass, run, kick to bounce) (Raab, 2003). On face value, one could argue that the information available to the player is simplified as the number of options to act have been reduced (Raab, 2003). However, by taking away a well-rehearsed response to the information perceived, rule modifications perhaps raise the challenge point for players as they must find a different solution to the problem posed by their opponents (Raab & Laborde, 2011; Macquet, 2009).

Our results indicate that the Wellington Rules had a disproportionate impact on player behaviour between Matchdays. Shortened formats of the game played on Matchday 1 (2017 & 2018 – 30 minutes, 2019 – 42 minutes) resulted in an increase in ball in play time, an increase

in ball-movement and, therefore, a likely increase in the opportunities for players to make decisions (Burton, Gillham & Hammermeister, 2011). Scanlan et al., (2016) found that shortening the duration of a game of basketball increased the efficiency of the team in possession of the ball, reducing the number of mistakes that occurred. Furthermore, the work of Ferraz and colleagues (2017; 2018) has suggested that soccer players who are aware that the match duration has been shortened tend to adopt a more aggressive pacing strategy. Both proficiency and intensity may have contributed to the more desirable performance characteristics on display at the Wellington Festival during shortened formats of the game on Matchday 1 than during games of regular match duration on Matchday 2.

Alternatively, fatigue and/or selection pressures may have contributed to the reduced ball in play time and decreased ball movement. Kempton et al (2013) reported that high physiological load reduced both the number and quality of elite rugby league player involvements during a game. The week-long festival placed relatively high physical demands on the academy players, which may have reduced their capability to perform and, in turn, affected the way the game tended to be played on Matchday 2 (Kempton et al., 2013; Roe et al., 2016; Tee et al., 2017). An additional stressor for players may have been the prospect of selection for both their country and Regional Academy. Whilst not operated by the RFU, selection for the England under 16 team took place at the Wellington Festival during the 2016 and 2017 festivals. Furthermore, Regional Academies have tended to select and deselect players into the under 18 system following the conclusion of the Wellington Festival. The importance players might have attached to the final game as a result of it being their last chance to make an impression in a full 70-minute game may have caused players (and their coaches) to adopt risk averse strategies and task avoidance (Taylor & Collins, 2019; Hill et al., 2015; Abbott & Collins, 2004), such as carrying the ball into contact, rather than passing the ball to a player in space.

Future Implications

The results of this study support the use of the rule modifications adopted to positively engineer changes to player behaviours in this talent identification and development environment. In short, the rule adaptations led to an increase in identified performance indicators leading us to conclude that they will have led to an increase in the volume of skill attempts.

However, this identified effect was limited to the shorter duration formats of the game and were not replicated in the 70-minute games used on Matchday 2. The reasons for this are not clear. However we would hypothesise two reasons. Firstly, that the rules have led to a more intense game which consequently led to increased fatigue. This may be further influenced by the fact that the 70-minute matches took place on the final day of a week-long festival. Future research might employ Global Positioning Systems to monitor both pacing strategies and total distance covered (Darrall-Jones, Jones & Till, 2016; Scanlan et al., 2016) to help determine the interactive effect of rule modifications, match duration and fatigue on performance indicators. The second hypothesis is that the reduced impact of rule modifications on standard duration games may also have been the result of external pressures driven by the prospect of international selection for the England under 16's squad (in 2016 & 2017) and selection for their Regional Academy (all years) at the end of the week. We suggest this may have led to players becoming more conservative in their play than in the shorter games. Consequently, future research might explore the impact of selection pressures on player performance and decision-making within talent identification settings.

These hypotheses aside, however, the findings of this study do indicate that the rule adaptations did lead to the desired increase in volume of skill attempts. Consequently, we

conclude that, where there is a desire to increase skills attempts within full-sided competitive situations, relevant rules changes, applied in shorter game settings can lead to these desired changes. Or, in other words, three x 30-minute completed games with rule adaptations, seem to be a better approach than one completed 70-minute game. Thus, organisers of competitions within talent development settings (aged 15-17) should consider scheduling relatively more games (3 or more) of shorter duration (e.g. approximately 30 minutes in a rugby context). It is important to note, however, we are not suggesting that shorter game formats with rule changes should replace the longer form of the game. The finding of this study should add to a coach's and NGB's range of tools with a view to support their professional judgement and decision making (Abraham and Collins, 2011) around talent development.

Finally, significant increases in ball in play time and ball movement do indicate that decision-making opportunities may have increased as a result of the Wellington Rules. Yet, the observational, descriptive and retrospective nature of this study means that this can only be inferred. Future investigations should consider the impact of rules on player decision-making by exploring the perspective of players through qualitative methods of inquiry. Such data would provide insight into players knowledge of the rules, how such knowledge has been developed and player's perception of how modified rules may have adapted their approach to playing the game. By employing these methods, more robust implications can be made for coaches seeking to educate their players on rule modifications in talent identification and development environments.

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